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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re PATENT APPLICATION of: Confirmation Number: 4649

**HONGO *et al.***

Application No.: **09/815,305**

Group Art Unit: 1763

Filed: March 23, 2001

Examiner: Arancibia, M. G.

Title: PLASMA PROCESSING APPARATUS HAVING AN EVACUATING ARRANGEMENT TO  
EVACUATE GAS FROM A GAS-INTRODUCING PART OF A PROCESS CHAMBER

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**- PRE-APPEAL BRIEF REQUEST FOR REVIEW -**

**Mail Stop AF**

Commissioner for Patents

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Sir:

Appellants hereby request that a panel of Examiners formally review the legal and factual basis of the rejection in the above-identified application prior to the filing of an Appeal Brief. Appellants assert that the outstanding final rejection (now on Appeal by virtue of the concurrently filed Notice of Appeal) is clearly improper based upon errors in facts.

**I. APPEALED REJECTIONS**

Appellants request review of the following rejections presented in the Final Office Action dated July 21, 2006 and maintained in the Advisory Action dated November 16, 2006:

- claims 26, 28-29, 37, 39-40, and 44-45, under 35 U.S.C. §103(a), as allegedly being unpatentable over Li '771 (US Patent No. 5,772,771);
- claims 27 and 38, under 35 U.S.C. §103(a), as allegedly being unpatentable over Li '771 in view of Tomoyasu '103 (U.S. Pat. No. 5,900,103); and
- claims 26-29, 31-32, 37-40, and 42-45, under 35 U.S.C. §103(a) as allegedly being unpatentable over Tei '215 (U.S. Patent Pub. No. 2002/0011215) in view of Tomoyasu '103 and Li '771.

**II. ARGUMENTS FOR TRAVERSAL**

Appellants simply rely on the basic criteria required to establish a *prima facie* case of obviousness. That is, first, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a

reasonable expectation of success. Finally, the prior art reference (or references when combined) *must teach or suggest all the claim limitations*. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. (See, *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)(see also, MPEP § 2143 - § 2143.03)).

Appellants, therefore, traverse the prior art rejections under 35 U.S.C. §103(a) because, as will be evident by the following discussion, the applied references, whether taken alone or in combination, *do not* in any way, *teach or suggest each and every element* recited by the claims. Briefly stated, the Examiner appears to have woefully misinterpreted the teachings of the primary reference Li '771, especially the disclosures regarding common gas feed line 80, cleaning gas line 82, and their respective attributes, and has relied on such misinterpretation to errantly maintain the prior art rejections.

1. What Li '771 Does & Does Not Teach About Gas Introducing Rings.

By way of review, the Li '771 reference teaches the use of a gas manifold 36 that is fluidly coupled to a series of 12 equally spaced nozzles 34, which are arranged in a ring-like pattern. The gas manifold 36 is depicted as having a circular configuration. (See Li '771: col. 3, lines 34-41; FIGs. 1, 4). Li '771 then specifically teaches that common gas feed line 80, used to supply the process gas, branches into gas feed lines 70, 72, which directly connect to opposites sides of manifold 36 in order to ensure constant gas pressure for all nozzles 34. The other side of the common gas feed line 80 is connected to a process gas valve 78. (See Li '771: col. 4, lines 19-24; FIG. 4).

Li '771 also discloses that, for dry cleaning applications, the common gas feed line 80 may be tapped, in between the manifold 80 and the process gas valve 78, with a cleaning gas line 82. The cleaning gas line 82 is connected to a cleaning gas shutoff valve 88 and ultimately to a vacuum pump 84. (See Li '771: col. 4, lines 38-48; FIGs. 4, 5). With this configuration, Li '771 discloses that, to clean the nozzles 34, process gas valve 78 is closed, a cleaning gas is introduced into vacuum chamber, cleaning gas shutoff valve 88 is opened and vacuum pump 84 slowly draws the cleaning gas into nozzles 34, back through manifold 36 and along clean gas line 82 back to the pump 84. (See Li '771: col. 4, lines 48-54; FIGs. 4, 5).

With respect to what Li '771 fails to teach, Appellants submit that, other than the common definition of a manifold and its depicted circular configuration, there is no

disclosure or suggestion, whatsoever, regarding the configuration of gas manifold 36. In particular, Li '771 never once describes, teaches, or suggests the use of an outlet port, separate and apart from an inlet port. Thus, based on the disclosed configuration, artisans of ordinary skill can only surmise that gas feed lines 70, 72 operate to supply process gas *into* manifold 36 as well as extract cleaning gas *out of* manifold 36.

2. Why the Applied Art Fails to Teach the Claimed Invention.

Each of the independent claims 26, 37, and 44 positively recite the use of a gas introducing ring forming an annular passage and a gas supply line, connected to the gas introducing ring, that supplies gas to the gas introducing ring. The independent claims also positively recite that the gas introducing ring includes an *inlet port opening* to the annular passage that is connected to the gas supply line so as to supply the gas to the annular passage and *an outlet port opening* to the annular passage that is connected to said gas exhaust line, *in which the outlet port opening is at a position different from a position at which the inlet port opens*.

The Examiner continues to insist that common gas feed line 80 of the primary reference, Li '771, corresponds to the claimed gas supply line, that common gas feed line 80 *also* corresponds to the claimed inlet port opening of the gas introducing ring, and that cleaning gas line 82 corresponds to the claimed outlet port opening of the gas introducing ring. (See, Final Office Action: page 2, last 2 lines; page 3, lines 6-10)(*see also*, Advisory Action: page 2).

Appellants first point out that the claim language clearly requires the use of a gas supply line *in addition* to the inlet port opening of the gas introducing ring. As such, the common gas feed line 80 of Li '771 cannot be construed as corresponding to *both* the claimed gas supply line *and* the claimed inlet port opening of the gas introducing ring, when the claim language clearly requires two separate and distinct elements.

Second, the claim language also requires that the gas introducing ring, in and of itself, includes an *inlet port opening* to the ring's annular passage and *an outlet port opening* to the ring's annular passage. The common and cleaning gas lines 80, 82 of Li '771 have nothing to do with the gas introducing ring. Rather, gas lines 80, 82 are just that – gas lines – and these gas lines *never* connect to, or even touch, gas manifold 36. By not connecting to manifold 36, gas lines 80, 82 cannot be construed, even under the broadest conceivable interpretation, as

being parts of, or belonging to, the claimed gas introducing ring – much less operate as the ring's inlet and outlet port opening, as claimed.

Third, not only do the claims recite a ring inlet port opening and a ring outlet port opening, they also specifically require that the outlet port opening of the ring *is at a position different* from a position in the ring at which the inlet port opens. As noted above, the only connections to the Li '771 gas manifold 36 are gas feed lines 70, 72, which directly connect to opposites sides of the manifold 36 in order to maintain constant nozzle gas pressure 34. Even if gas feed lines 70, 72 were to somehow be construed as being part of the manifold 34 due to their direct connection to manifold 36 (which Appellants do not concede), there is still no mention in Li '771 of an outlet port, separate and apart from an inlet port. That is, as discussed above, Li '771 only teaches that gas feed lines 70, 72 supply process gas to opposites sides of manifold 36 and that, after a cleaning gas is introduced into the chamber, the process gas is shut off, the cleaning gas shutoff valve 88 is opened and vacuum pump 84 slowly draws the cleaning gas into nozzles 34, back through manifold 36 and along clean gas line 82 back to the pump 84.

Such disclosure can only mean that, under the Li '771 configuration, both gas feed lines 70, 72 operate at the same time to either supply process gas into manifold 36 or extract cleaning gas out of manifold 36. So, to the extent that gas lines 70, 72 could be construed as being part of the manifold 34, both lines 70, 72 must still operate at the same time as either *inlet ports* or *outlet ports*. As such, the gas lines 70, 72 of Li '771 cannot, in any way, be construed to correspond to the claimed inlet ports or outlet ports of the gas introduction ring – much less that the outlet port opening of the ring is at a position different from a position in the ring at which the inlet port opens, as claimed.

Appellants submit that the remaining applied references, namely Tei '215, Tomoyasu '103, and Li '771, are incapable of curing the deficiencies of Li '771 noted above. Thus, for the reasons presented above, Appellants submit that the Examiner has not met the initial burden of establishing obviousness, as none of the applied references, whether taken alone or in combination, teach or suggest each and every element recited by the independent claims.

Accordingly, independent claims 26, 37, and 45 are clearly patentable and, because claims 27-29 and 31-32, claims 38-40 and 42-43, and claim 45 depends from claims 26, 37,

and 45, respectively, claims 27-29 and 31-32, claims 38-40 and 42-43, and claim 45 are also patentable at least by virtue of dependency as well as for their additional recitations.

### III. CONCLUSION

Appellants respectfully submit that, for at least the reasons detailed herein, the Examiner has not met the initial burden of establishing obviousness, as the applied references fail to teach or suggest all the features recited in the rejected claims. Appellants, therefore, submit that claims 26-29, 31-32, 37-40, 42-43, and 44-45 are clearly patentable and a decision by the review panel to this effect is respectfully and earnestly solicited.

Respectfully submitted,

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## Addendum

### Invention Title

PLASMA PROCESSING APPARATUS HAVING AN EVACUATING  
ARRANGEMENT TO EVACUATE GAS FROM A GAS-INTRODUCING PART OF A  
PROCESS CHAMBER



## Addendum

### Attachment 1

PLASMA PROCESSING APPARATUS HAVING AN EVACUATING  
ARRANGEMENT TO EVACUATE GAS FROM A GAS-INTRODUCING PART OF A  
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